MCSE Guide to Microsoft® Windows® XP Professional

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MCSE Guide to Windows XP Professional

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Preface

Welcome to the *MCSE Guide to Windows XP Professional*. This book offers you real-world examples, interactive activities, and hundreds of hands-on projects that reinforce key concepts and help you prepare for the Microsoft certification exam #70-270: Installing, Configuring, and Administering Microsoft Windows XP Professional. This book will also help prepare you for MCSA certification. This book also features troubleshooting tips for solutions to common problems that you will encounter in the realm of Windows XP Professional administration.

This book offers in-depth study of all the salient functions and features of installing, configuring, and maintaining Windows XP Professional as a client operating system. Throughout the book, we provide pointed review questions to reinforce the concepts introduced in each chapter and to help prepare you for the Microsoft certification exam. In addition to the review questions, we provide detailed hands-on projects that let you experience firsthand the processes involved in Windows XP Professional configuration and management. Finally, to put a real-world slant on the concepts introduced in each chapter, we provide case studies to prepare you for situations that must be managed in a live networking environment.

The Intended Audience

This book is intended to serve the needs of those individuals and information systems professionals who are interested in learning more about Microsoft Windows XP Professional, as well as individuals who are interested in obtaining Microsoft certification on this topic. These materials have been specifically designed to help individuals prepare for this certification exam.

Chapter 1, "Introduction to Windows XP Professional," introduces the latest Windows operating systems family—including Windows XP Professional and Windows .NET Server—and describes the major features of the Windows environment. In addition, it explores the architecture of Windows XP Professional and related operating systems. Finally, it defines the minimum system requirements for Windows XP Professional and introduces the two major networking models under which Windows XP can be used.

In **Chapter 2**, "Installing Windows XP Professional," we discuss how to decide whether to perform an upgrade or a fresh installation of Windows XP Professional. We also explore how to boot using multiple operating systems. In addition, we examine installation options such as unattended installations; whether to install using Windows XP setup disks, a CD-ROM, or the network; and, finally, we describe the various setup and advanced installation options.

Chapter 3, "Using the Systems Utilities," examines the tools used to manage Windows XP Professional, namely, the Microsoft Management Console (MMC), Administrative Tools, Task Scheduler, and Control Panel applets. These tools are used to install and configure new hardware, create hardware profiles for changing system configurations, as well as configure PC cards and multiple displays.

In **Chapter 4**, "Managing Windows XP File Systems and Storage," we explore the differences between basic and dynamic storage and discuss the drive configurations supported by Windows XP. This chapter also introduces file systems supported by Windows XP Professional: FAT, FAT32, and NTFS. Additionally, we describe permissions, sharing, and other security issues related to file systems. From an administrative standpoint, we also discuss drive, volume, and partition maintenance and administration under Windows XP Professional.

We introduce you to the concepts involved in working with users, groups, profiles, and policies in **Chapter 5**, "Users, Groups, Profiles, and Policies." This discussion includes setting up, naming, and managing local users and groups and default user and group accounts. From there, we examine the Windows XP Professional logon authentication process. This chapter concludes with in-depth coverage of the creation and management of user accounts, profiles, and local security policies.

Chapter 6, "Windows XP Security and Access Controls," teaches you about the Windows XP security model and the key role of logon authentication. We show you how to customize the logon process, discuss domain security concepts, and provide additional instructions for setting up the local computer policy. This chapter also shows you how to enable and use auditing. We conclude this discussion on security with details on encrypting NTFS files, folders, or drives using the Encrypting File System (EFS).

We cover the world of networking Windows XP in **Chapter 7**, "Network Protocols." Here, you'll explore the protocols supported by Windows XP Professional. In addition, we detail the intricacies of configuring and managing TCP/IP, and of configuring and managing NetWare access using the NWLink protocol and the Client Service for NetWare (CSNW).

We examine remote access to Windows XP Professional in **Chapter 8**, "Internetworking with Remote Access Service." You'll learn how to use remote access under Windows XP, configure various RAS connection types, work with telephony services and connections, manage RAS security, and troubleshoot RAS connection problems.

In **Chapter 9**, "Printing and Faxing," we discuss Windows XP print terminology and architecture, and examine the special features of the Windows XP print system. We provide hands-on instruction for creating and managing printers and printer permissions, and explain how to take advantage of XP's built-in fax and fax-sharing support. This chapter concludes with a discussion on troubleshooting printing and faxing problems.

Chapter 10, "Performance Tuning," gives you the information you need to understand the performance and monitoring tools found in Windows XP. You'll learn how to create a Counter log for historical analysis, configure Alert events to warn of performance problems, and establish a baseline of normal system operation against which to measure Windows XP Professional performance. Finally, we discuss how to detect and eliminate bottlenecks to keep your system running as efficiently as possible.

In **Chapter 11**, "Windows XP Professional Application Support," we discuss how to deploy applications that were created for use in other operating environments, such as DOS or older versions of Windows. Finally, we explore how to fine-tune the application environment for DOS and Win16.

Chapter 12, "Working with the Windows XP Registry," discusses the function and structure of the Registry, which is the underlying database that stores system configuration information in Windows XP. This chapter describes the purpose of each of the five Registry keys, how to use the Registry editing tools, defines the fault-tolerant mechanisms for the Registry, and provides information on how to back up and restore the Registry.

In **Chapter 13**, "Booting Windows XP," we explain the steps that Windows XP Professional goes through during the boot process. This discussion includes the operation of the key Windows XP startup files, the boot options offered via the Windows Advanced Options Menu, and how to troubleshoot system restoration by using Safe Mode. In addition, we explore how to edit the Boot.ini file to manipulate the boot process, and how multi-boot configurations are created and function.

We introduce you to disaster protection and recovery concepts in **Chapter 14**, "Windows XP Professional Fault Tolerance." Here, you'll learn how to back up data and settings on Windows XP Professional and recover a Windows XP Professional client's applications and data. Additionally, we introduce IntelliMirror technology and describe its key features, as well as remote operating system installation, and how it can be used with IntelliMirror to recover a PC remotely. Finally, we show you how to use the Recovery Console and the Safe Mode options for recovering or repairing damaged Windows XP Professional installations.

This book concludes with **Chapter 15**, "Troubleshooting Windows XP." Here, we examine how to collect documentation about your systems to aid in troubleshooting and preventing problems, and review common sense approaches to troubleshooting. In addition, we discuss how to troubleshoot general problems with Windows XP and use some of the troubleshooting tools found in Windows XP Professional.

Features

Many features in this book are designed to improve its pedagogical value and aid you in fully understanding Windows XP Professional concepts.

- **Chapter Objectives.** Each chapter begins with a detailed list of the concepts to be mastered within that chapter. This list provides you with a quick reference to the contents of the chapter as well as a useful study guide.
- **Illustrations and Tables.** Numerous illustrations of screens and components help you visualize common setups, theories, and architectures. In addition, tables provide details and comparisons of both practical and theoretical information.
- **Chapter Summaries.** The text of each chapter concludes with a summary of the concepts it has introduced. These summaries provide a helpful way to recap and revisit the ideas covered in each chapter.
- **Key Terms.** Following the Chapter Summary, a list of key Windows XP terms and their definitions encourages proper understanding of the chapter's key concepts and provides a useful reference.
- **Review Questions.** End-of-chapter assessments begin with a set of review questions that reinforce the ideas introduced in each chapter. These questions not only show you whether you have mastered the concepts, but also are written to help prepare you for the Microsoft certification exam.
- **Hands-on Projects.** Although it is important to understand the theory behind technology, nothing can improve upon real-world experience. Each chapter provides a series of exercises aimed at giving students hands-on implementation experience.
- **Case Projects.** Finally, each chapter closes with a section that proposes certain situations. You are asked to evaluate the situations and decide upon the course of action to be taken to remedy the problems described. This valuable tool will help you sharpen your decision-making and troubleshooting skills, which are important aspects of network administration.

Text and Graphic Conventions

Wherever appropriate, additional information has been added to this book to help you better understand what is being discussed in the chapter. Icons throughout the text alert you to additional materials. The icons used in this book are described here:

Tips give extra information on how to attack a problem, time-saving shortcuts, or what to do in certain real-world situations.

Important information about potential mistakes or hazards is highlighted with a Caution icon.

Each step-by-step Hands-on Project is marked by the Hands-on Project icon.

Case Project icons mark scenario-based assignments in which you are asked to implement independently the information you have learned.

Instructor's Materials

The following supplemental materials are available when this book is used in a classroom setting. All of the supplements available with this book are provided to the instructor on a single CD-ROM.

Electronic Instructor's Manual. The Instructor's Manual that accompanies this textbook includes:

- Additional instructional material to assist in class preparation, including suggestions for lecture topics, suggested lab activities, tips on setting up a lab for the hands-on assignments, and alternative lab setup ideas in situations where lab resources are limited.
- Solutions to all end-of-chapter materials, including the Review Questions, Hands-on Projects, and Case Projects.

ExamView® This textbook is accompanied by ExamView, a powerful testing software package that allows instructors to create and administer printed, computer (LAN-based), and Internet exams. ExamView includes hundreds of questions that correspond to the topics covered in this text, enabling students to generate detailed study guides that include page references for further review. The computer-based and Internet testing components allow students to take exams at their computers, and also save the instructor time by grading each exam automatically.

PowerPoint presentations. This book comes with Microsoft PowerPoint slides for each chapter. These are included as a teaching aid for classroom presentation, to make available to students on the network for chapter review, or to be printed for classroom distribution. Instructors, please feel at liberty to add your own slides for additional topics you introduce to the class.

MeasureUp Test Prep Software and CourseSim Simulation Software. The envelope bound into this book contains additional training tools designed to prepare you for MCSE certification. On the CD-ROM you will find CoursePrep exam preparation software, which provides 50 sample MCSE exam questions mirroring the look and feel of the MCSE exams, and CourseSim simulation software, which allows you to perform tasks in a simulated Windows XP environment.

Where Should You Start?

This book is intended to be read in sequence, from beginning to end. Each chapter builds upon those that precede it, to provide a solid understanding of Windows XP Professional. After completing the chapters, you may find it useful to go back through the book and use the review questions and projects to prepare for the Microsoft certification test for Windows XP Professional. Readers are also encouraged to investigate the many pointers to online and printed sources of additional information that are cited throughout this book.

Acknowledgments

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Michael Stewart: Thanks to my boss and co-author, Ed Tittel, for including me in this book series. Thanks to my project manager/editor Dawn Rader who makes me sound coherent. To Mark: I don't think I want to visit anymore if you are gonna have me repaint your house again. And finally, as always, to Elvis—so long and thanks for all the fish. No wait, that's the wrong cool frood—we'll miss you Douglas Adams.

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Microsoft Windows XP Professional Hardware Requirements

Following are the Microsoft defined minimum requirements to install and run Windows XP Professional:

- 233-MHz Pentium or higher microprocessor (P5 or equivalent compatible clone) or a Compaq Alpha processor with the latest firmware version installed (except for DECpc 150 AXP, DEC 2000-500, Multia, and AXPpci 33 processors)
- 128 MB of RAM for Intel (256 MB or more recommended; 4 GB maximum)
- 2 GB hard disk with a minimum of 1.5 GB of free space
- SVGA or higher resolution monitor
- Keyboard
- Microsoft Mouse or compatible pointing device
- A CD-ROM drive (12X or faster recommended) (or network access, for networked installations)
- A high-density 3.5-inch disk drive
- A Windows XP compatible network adapter card and related cable